

Claims

1. Method in the maintenance of machines, processes, automation systems and equipment relating to papermaking, where the machine relating to papermaking is
5 located at a production plant (100), which is equipped with a plant data system (155), and wherein a teleservice connection (180) based on a data communication link is arranged between the production plant (100) and a teleservice center (200), and where the condition, state and/or performance of the machine units and/or processes and/or automation systems of the production line at the production plant
10 are monitored by monitoring systems, such as condition monitoring systems (130) and/or performance measuring systems (140) and/or quality assessment systems (150) and diagnostic units (110), in order to recognise emergency situations, in which method in a recognised emergency situation an automatic service process is started based on signals given by said monitoring systems, **characterized** in that
15 the method functions spatially, whereby the method ensures that all stages will be carried out and that all messages will reach their destination.
2. Method according to claim 1, **characterized** in that said automatic service process is started when the value of measured data collected from the monitoring
20 systems exceeds or falls shorts of the established limit value.
3. Method according to claim 1 or 2, **characterized** in that based on said automatic service process instructions for action and/or an action are formed automatically in order to remedy failure situations at the production plant.
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4. Method according to any claim 1 - 3, **characterized** in that the automatic service process comprises stages, in which
 - for the magnitudes measured/determined by the monitoring systems (110, 130, 140, 150) limit values are established, and any exceeding or falling short of
30 these will cause an alarm signal, that is, a triggering signal,

- in the production plant a data collecting unit (120) is arranged, which receives the signals/measured data arriving from the monitoring systems (110, 130, 140, 150) and stores them in a database,
- a message relay system (160) is arranged at the production plant to receive the signals arriving from the data-collecting unit (120), which signals comprise triggering signals and measured data,
- based on said signals and/or said triggering signals a failure situation is defined as having occurred,
- a data communication link (180) is arranged between the message relay system (160) and the teleservice center (200),
- in a failure situation, an automatic failure report is transmitted to the teleservice center (200) by using said data communication link (180),
- the failure situation is analysed automatically at the teleservice center (200), and
- based on the analysis, instructions for action are generated automatically to remedy the failure situation.

5. Method according to any claim 1 - 4, **characterized** in that between the message relay system (160) and the plant data system (155) a data communication link is arranged.

6. Method according to any claim 1 - 5, **characterized** in that at the stage where the failure situation is analysed, data measured earlier on the same or a similar object is utilised in the analysis.

7. Method according to any claim 1 - 6, **characterized** in that in the instructions for action an instruction is proposed concerning adjustment of the operating parameters of the machine.

8. Method according to any claim 1 - 7, **characterized** in that the operating parameters of the machine are adjusted in such a way that the service action can be put off.
- 5 9. Method according to any claim 1 - 8, **characterized** in that the operating parameters of the machine are adjusted in such a way that the service action can be put off until the following regular service.
- 10 10. Method according to any claim 1 - 9, **characterized** in that the automatically generated instructions for action are delivered as an automatic message to the service staff of the teleservice center (200) and/or to the service staff of the production plant (100).
- 15 11. Method according to any claim 1 - 10, **characterized** in that said automatically generated instructions for action and/or said action for remedying failure situations at the production plant comprise a control action, by which the parameters of the production plant's machine unit are adjusted automatically.
- 20 12. System in the maintenance of machines, processes, automation systems and equipment relating to papermaking, where the machine relating to papermaking is located at a production plant (100), which is equipped with a plant data system (155), and wherein a teleservice connection (180) based on a data communication link is arranged between the production plant (100) and the teleservice center (200), and where the condition, state and/or performance of the machine units and/or processes and/or automation systems of the production line at the production plant are monitored by monitoring systems, such as condition monitoring systems (130) and/or performance measuring systems (140) and/or quality assessment systems (150) and diagnostic units (110), in order to recognise emergency situations, which system comprises means for providing an automatic service process, characterized in that the system is spatial whereby the system func-
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tions in such a way that all messages will reach their destination and all defined stages will be carried out.

13. System according to claim 12, **characterized** in that the system comprises
5 means for providing automatically generated instructions for action.

14. System according to claim 12 or 13, **characterized** in that the system comprises

- 10 - means for collecting automatic measured data from the machine units of the production plant,
- means for transmitting the measured data from the production plant to a teleservice center,
- means for analysing the measured data at the teleservice center,
- means for generating automatic instructions for action at the teleservice center,
15 and
- means for transmitting the automatic instructions for action to inform the service staff.

15. System according to claim 12 or 14, **characterized** in that the system comprises
20 a data-collecting unit (120), which is arranged to collect and store the data arriving from the monitoring systems (110, 130, 140, 150), and a message relay system (160), which is adapted to receive triggering signals and data arriving from the data-collecting unit (120) and/or itself to form a triggering signal.

25 16. System according to claim 12 or 15, **characterized** in that a data communication link is arranged between the message relay system (160) and the plant data system (155).

17. System according to claim 12 or 16, **characterized** in that the message relay
30 system (160) is arranged to form and transmit messages in a structured form, pref-

erably in XML form.

18. System according to claim 12 or 17, **characterized** in that the messages
formed by the message relay system (160) are encrypted or protected in some
5 other manner.

19. System according to claim 12 or 18, **characterized** in that the system also
comprises means for generating a video and audio link between the production
plant (100) and the teleservice center (200).

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20. System according to claim 12 or 19, **characterized** in that the means for gen-
erating a video and audio link between the production plant (100) and the teleser-
vice center (200) comprise a quick-acting key, which is arranged to open a direct
data transmission link without any essential delay between the operator at the pro-
15 duction plant (100) and the staff at the teleservice center (200), as well as the
means required for the data transmission link.